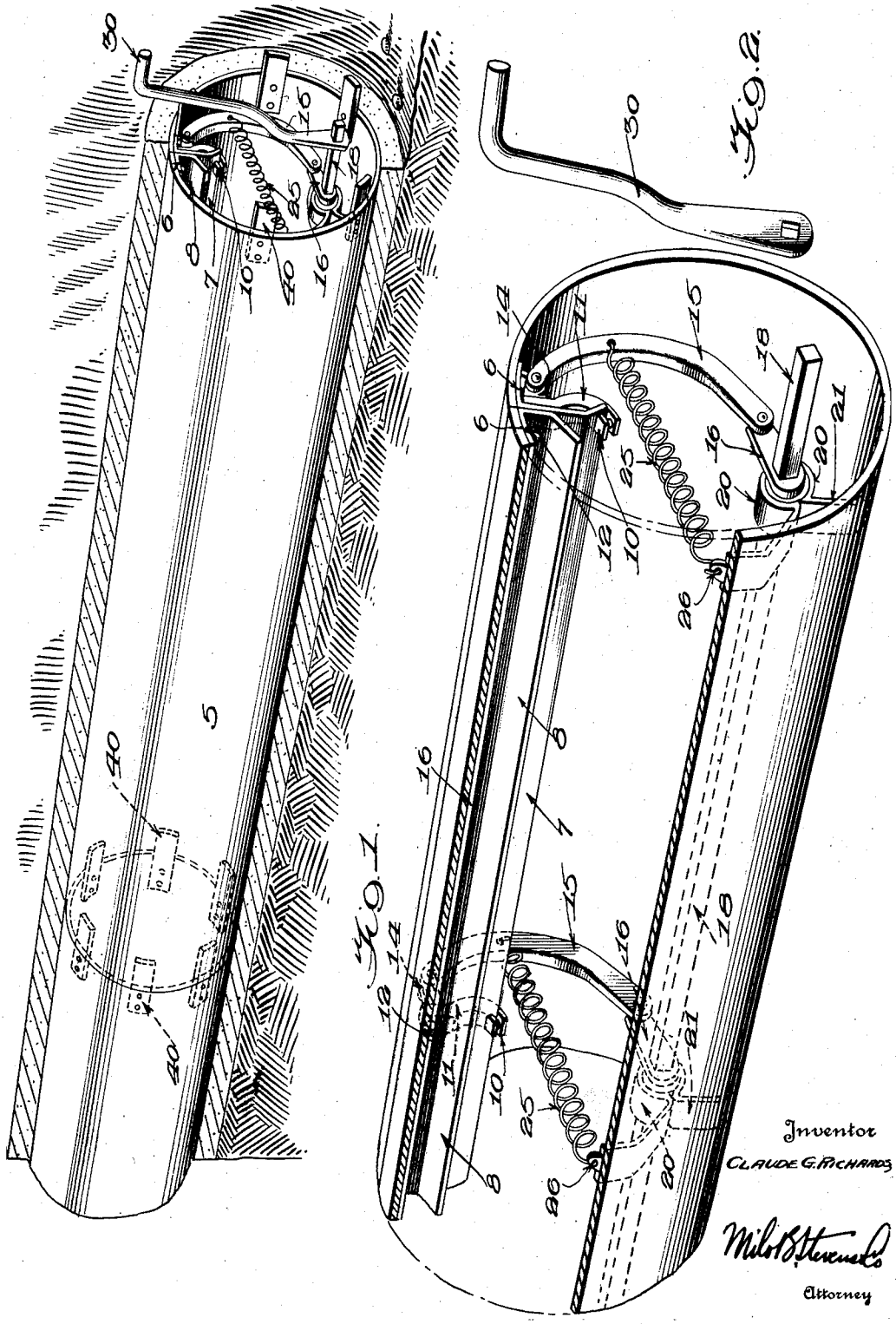
June 2, 1925. 1,540,185

C. G. RICHARDS

MOLD

Filed July 21. 1924 2 Sheets-Sheet 1



Inventor
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June 2, 1925

1,540,185

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2 Sheets-Sheet 2

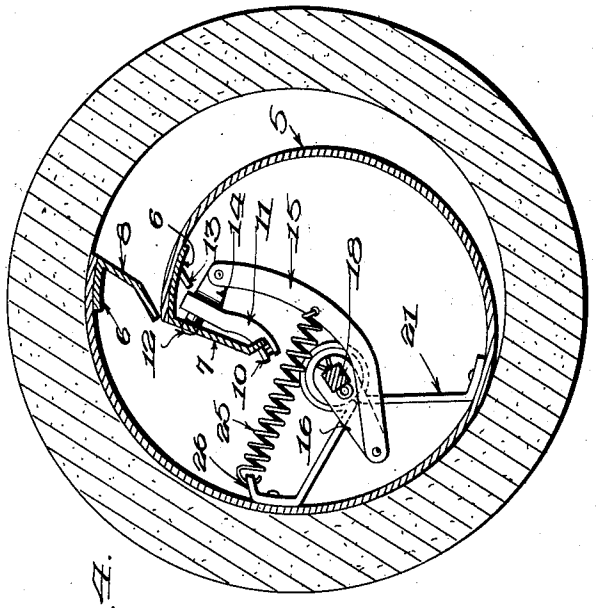


Fig. 4.

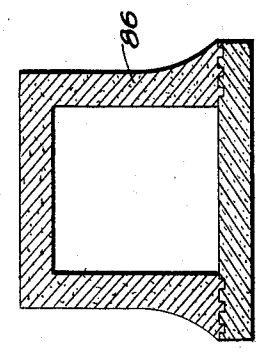


Fig. 7.

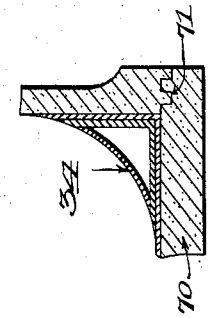


Fig. 6.

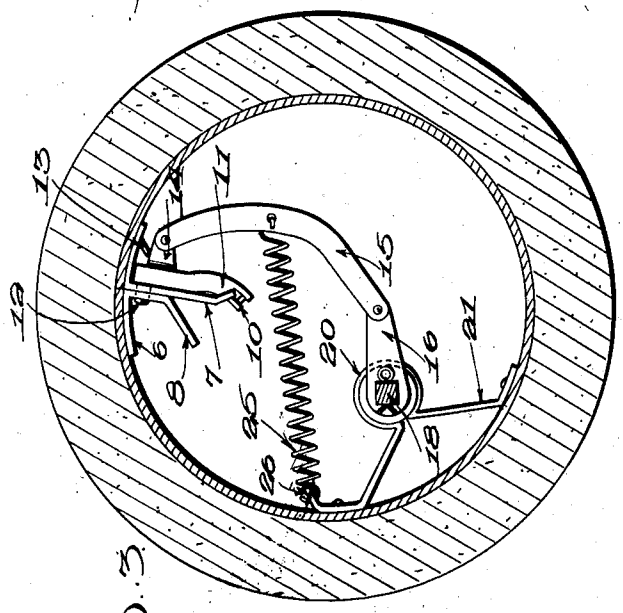


Fig. 3.

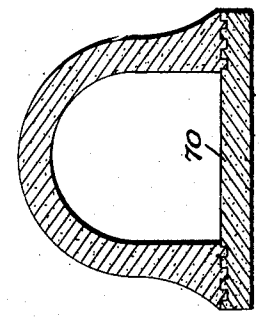


Fig. 5.

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UNITED STATES PATENT OFFICE.

CLAUDE G. RICHARDS, OF BOLCKOW, MISSOURI.

MOLD.

Application filed July 21, 1924. Serial No. 727,346.

To all whom it may concern:

Be it known that I, CLAUDE G. RICHARDS, a citizen of the United States, residing at Bolckow, in the county of Andrew and State of Missouri, have invented new and useful Improvements in Molds, of which the following is a specification.

This invention relates to inside molds or forms for concrete construction although not necessarily restricted to such use.

Briefly stated an important object of the invention is to provide an inside mold for concrete work having novel means whereby the same may be collapsed subsequent to forming the mold.

A further and equally important object of the invention is to provide an inside mold having simple and reliable means whereby the same may be held in expanded or operative position.

A further and equally important object is to provide a mold provided with novel means to withstand external pressure.

A further object is to provide a mold of the character specified which is of highly simplified construction, durable in use, and comparatively cheap to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application and in which like numerals are employed to designate like parts throughout the same—

Figure 1 is a perspective illustrating the application of the improved mold.

Fig. 2 is a sectional perspective through the improved mold;

Fig. 3 is a vertical transverse sectional view through the mold in its expanded position;

Fig. 4 is a vertical transverse sectional view through the mold in its collapsed position;

Fig. 5 is a sectional view through a conduit constructed in accordance with the invention and having a flat bottom and arched top.

Fig. 6 is a sectional view through one of a pair of corner members employed for making a conduit with a flat bottom;

Fig. 7 is a section view through a conduit constructed with the aid of the improved mold and having its walls flat.

In the drawings wherein for the purpose of illustration is shown a preferred embodiment of the invention, the numeral 5 designates a longitudinally split tubular body of suitably stout metal, the longitudinal edges of which are provided with angle bars 6. Figs. 1, 3 and 4 plainly illustrate that the angle bars 6 which are secured to the edge portions of the tubular body 5 are provided with inwardly extending flanges 7 and 8 by means of which the body may be contracted or expanded without difficulty, that is to say, one flange partakes of a free sliding movement with respect to the other flange.

Also the flanges 7 and 8 flatly contact with each other and therefore hold the body in its expanded position against external pressure. Fig. 3 illustrates that when the tubular body 5 is expanded the flanges 7 and 8 are flatly in contact with each other and therefore prevent the edges of the longitudinally split body from moving into overlapping relation.

The inner longitudinal edge portions of the transversely curved flange 7 is provided at spaced points with apertures for the reception of lugs 10 on the inner edges of levers 11. The lugs 10 are permitted to rock in the openings in the flange 7 so that the lever may move with respect to the flange 7. The intermediate portion of each lever 11 carries a locking pin 12 adapted to be extended through alined openings in the flanges 7 and 8 so as to securely and positively lock the flange together. When the flanges are locked together by the locking pin 12 the form is securely and positively held in its expanded or operative position. The outward movement of each lever 11 is limited by means of a projection 13 carried by the inner side of the body 5 in slightly spaced relation to the lever. However the lever 11 has sufficient swinging movement to permit the pin 12 to be entirely removed from engagement with the flange 8.

Each lever 11 is provided adjacent one end with an ear 14 to which a link 15 is connected. One end of the link is connected to a radial crank 16 which is in turn secured in any suitable manner to a main longitudinally extending operating shaft 18.

The operating shaft 18 is rotatably extended through the bearing members 20 of

the brackets 21 and has rigid connection with a plurality of cranks 16 so that when the shaft is turned all of the cranks are turned simultaneously.

As illustrated in Figs. 3 and 4 each link 15 is curved longitudinally and has connection intermediate its ends with a coil spring 25 by means of which the locking pin 12 is urged into locking engagement with the flanges 7 and 8. One end of the coil spring may be anchored to any other place on the mold. It will be seen that the coil spring 25 constantly urges the pin 12 in the direction of the flange 8 and when the opening in the flanges 7 and 8 are in alinement the pin 12 is moved to locking position.

One end of the main operating shaft is adapted to be engaged by a main operating hand crank 30 by means of which the mold may be collapsed or expanded. The operation of the hand crank 30 will result in the simultaneous movement of all of the cranks 16 and consequently the mold or form will be uniformly collapsed or expanded at all points. When the cranks 16 are moved beyond the center the links 15 will be locked in position.

In case the molds are used in connection with large work the tubular body 5 may be strengthened and reinforced with hoops or other suitable means.

In case it is desired to form a mold with a flat bottom and with more or less straight sides as shown in Fig. 5, the flat bottom of the conduit is first formed and a pair of corner members 34 are then positioned as illustrated in Fig. 6. After two of the corner members 34 have been positioned on the base or flat bottom 70 the mold is placed in position and the concrete is poured. If desired a tongue and groove connection 71 may be employed between the straight sides of the conduit and the flat bottom 70. In this case, of course, the top of the conduit is made round as will be seen.

Or if desired four of the corner members 34 may be employed in the formation of a conduit 86 with four corners as shown in Fig. 7. In this case also the bottom of the conduit is first made and the corner members 34 are subsequently placed in position. After the conduit is formed and has hardened sufficiently, the form is tripped and contracted to permit of its removal and the corner members 34 are then removed separately and singly.

With reference to the foregoing description taken in connection with the accompanying drawing it will be seen that the improved inside form may be quickly collapsed after the conduit has hardened sufficiently and due to its decreased diameter may be quickly withdrawn.

A number of the improved molds may be placed end to end and in that case connecting strips 40 carried by the end of one mold may be positioned within the adjacent end of another mold so that lateral movement of one section with respect to the adjacent section will be prevented.

Having thus described the invention, what is claimed is:

1. A collapsible mold comprising a longitudinally split body, strengthening and reinforcing members secured to the meeting edge portions of said body and having inwardly extending strain resisting flanges contacting with each other and having openings adapted for alinement, and locking levers connected to one of said flanges at points spaced along the same and having locking pins to extend through said openings to connect said flanges, there being means to simultaneously operate said levers.

2. A collapsible mold comprising a longitudinally split body, angle bars secured to the edge portions of said body and having inwardly extending strain resisting flanges flatly contacting with each other, locking pins to extend through the flanges whereby the flanges may be locked together to hold the longitudinally split body in expanded position, and a plurality of levers arranged at spaced points along the longitudinally split body and carrying said locking pins.

3. A collapsible mold comprising a longitudinally split body, angle bars secured to the edge portions of said body, and having inwardly extending strain resisting flanges flatly contacting with each other, locking means to extend through the flanges whereby the flanges may be locked together to hold the longitudinally split body in expanded position, and levers arranged at spaced points along the longitudinally split body and carrying said locking means, there being means to limit the swinging movement of the levers.

4. A collapsible mold comprising a longitudinally split body, angle bars secured to the edge portions of said body and having inwardly extending strain resisting flanges flatly contacting with each other, means whereby the flanges may be locked together to hold the longitudinally split body, a plurality of levers arranged at spaced points along the longitudinally split body and carrying said means, there being means to limit the swinging movement of said levers, and springs connected to said links urging said first named means in locking engagement with said flanges.

5. An inside form comprising a longitudinally split body, having its edge portions provided with inwardly extending flanges flatly contacting with each other and being curved transversely, locking pins adapted to extend through said flanges to connect the same, levers connected to said

locking pins, links connected to said levers, cranks connected to said links, and a shaft connected to said cranks.

6. An inside form comprising a longitudinally split body having its edge portions provided with inwardly extending flanges flatly contacting with each other and having their inner edge portions extending angularly, locking pins adapted to extend through said flanges to connect the same, levers connected to said locking pins, links connected to said levers, cranks connected to said links, a shaft connected to said cranks, and coil springs urging said locking pins into constant engagement with the flanges.

7. An inside form comprising a longitudinally split body having its edge portions provided with inwardly extending flanges flatly contacting with each other and being bent transversely, locking pins adapted to extend through said flanges to connect the same, levers connected to said locking pins, links connected to said cranks, and springs urging said locking pins into constant engagement with the flanges, there being means to limit the swinging movement of said levers.

8. An inside form comprising a longitudinally split body having its edge portions provided with inwardly extending flanges flatly contacting with each other and being bent transversely, locking pins adapted to extend through said flanges to connect the same, levers connected to said locking pins, links connected to said levers, cranks connected to said links, a shaft connected to said cranks, springs urging said locking pins into constant engagement with the flanges, and means rotatably supporting the shaft.

9. An inside form comprising a longitudinally split body having its edge portions provided with inwardly extending flanges flatly contacting with each other, locking pins adapted to extend through said flanges to connect the same, levers connected to said locking pins, links connected to said levers, cranks connected to said links, a shaft connected to said cranks, springs urging said locking pins into constant engagement with the flanges, there being means to limit the swinging movement of said levers, means rotatably supporting the shaft, the exterior of the split body being provided with extensions to form a flat bottom conduit.

In testimony whereof I affix my signature.

CLAUDE G. RICHARDS.